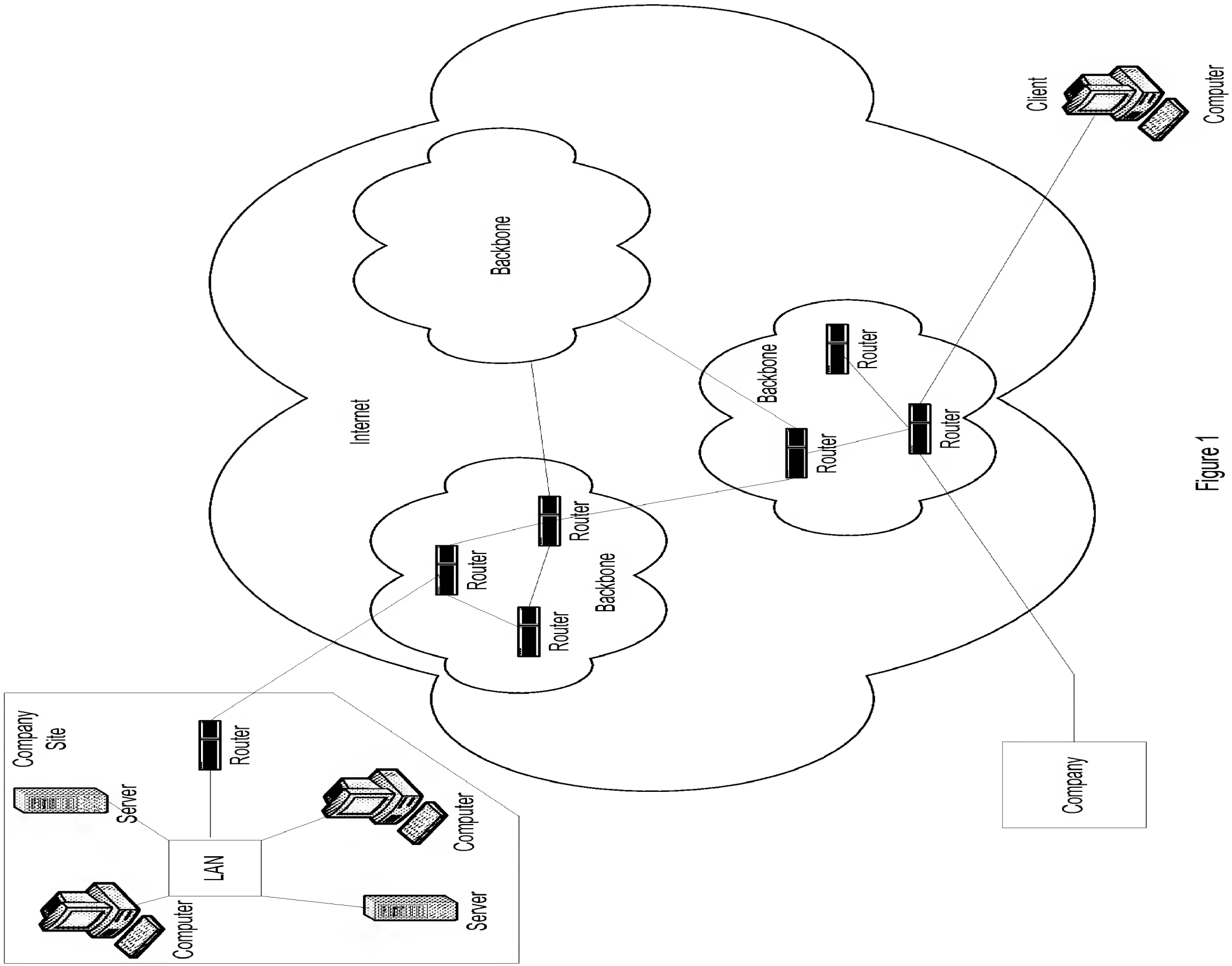
Client
Computer
Backbone
Internet
Backbone
Router
Router
Router
Router
Router
Backbone
Router
Company
Company
Site
Server
Router
LAN
Computer
Computer
Server

Figure 1

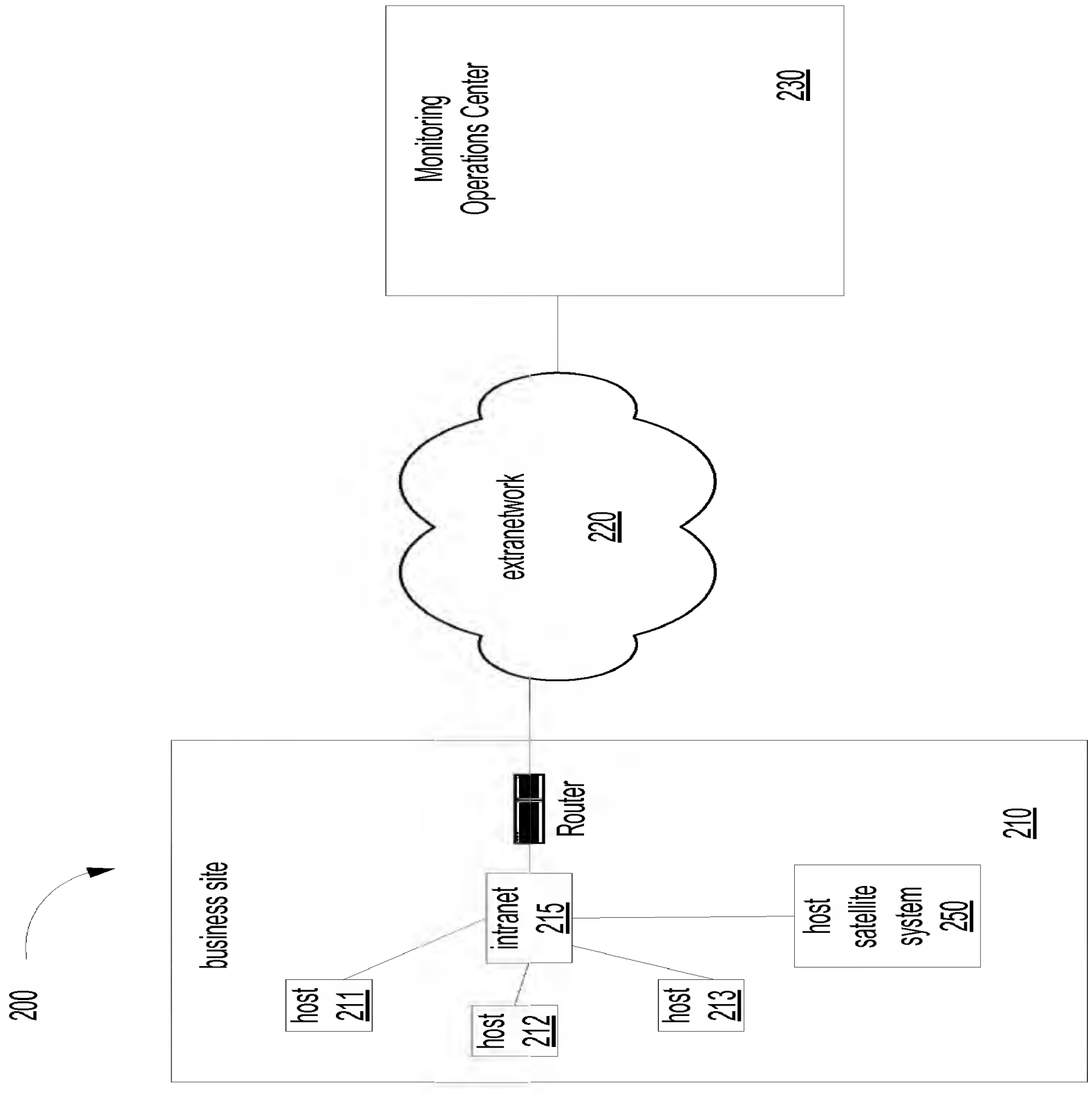
Monitoring
Operations Center
230
extranetwork
220
Router
200
business site
intranet
215
host
211
host
212
host
213
host
satellite
system
250
210

Figure 2A

291

TEST	PORT #	MONITORING
check_dig	NP	Tests host DNS
check_disk	NP	Checks disk space (%) host system and generates alert if percentage is above threshold values.
check_dns_resolution	NP	Obtains IP address for specified host/domain query using nslookup. Can specify optional DNS server or default to specified server.
check_ftp	21	Tests an FTP connection with the host and generates an alert if answer time is above threshold values.
check_printer	NP	Tests the status of a printer.
check_http/htttps	80 (http) 443 (https)	Test the HTTP service on the host. Test normal and secure severs and generates an alert if the answer time is above a threshold value. Follows redirects, searches for strings and regular expressions, checks connection times, and reports on certificate expiration times.
check_imap	143	Tests the IMAP4 service on the specified host and generates an alert if answer time is above threshold values.
check_ircd	6667	Tests IRC daemon on the host and returns an alert of the number of users is above threshold values.
check_nntp	119	Tests the network news service on host and generates an alert if answer time is above threshold values.
check_ntp	NP	Tests Network Time service and generates an alert when offset(s) is above threshold values.
check_oracle	NP	Tests remote or local TNS status and local database status.
check_pop	110	Tests POP mail service on host and generates an alert if answer time is above threshold values.
check_postgresql	5432	Tests postgres SQL service on host and generates an alert if answer time is above threshold values.
check_real	554	Tests the IMAP4 service on the specified host (at port 554) and generates an alert if answer time is above threshold values.
check_rpc		Tests if a RPC service is registered and running on host using rpcinfo command.
check_smtp	25	Tests the SMTP mail service on host and generates an alert if answer time is above threshold values.
check_snmp		Tests SNMP service on host and generates an alert if answer time is above threshold values.
check_ssh	22	Tests SSH service on host and generates an alert if request times out.
check_tcp	Any	Tests TCP connections with host and generates an alert if answer time is above threshold values.
check_time	NP	Tests time port on host and generates an alert if answer time is above threshold values.
check_udp	Any	Tests UDP connection on host and generates an alert if answer time is above threshold values.

Figure 2A

PARAMETER	THRESHOLD LEVELS	THRESHOLD VALUES
Disk Utilization	OK Warning Critical	< 75% 75% 90%
Processor Utilization	OK Warning Critical	< 70% 70% 85%
Load	OK Warning Critical	< 0.8 0.8 1
Memory Utilization	OK Warning Critical	< 20% 20% free 10% free
Swap Space	OK Warning Critical	< 20% 20% free 10% free
Number of Users	OK Warning Critical	< 10 users 10 users 20 users
Number of Processes	OK Warning Critical	< 400 processes 400 processes 700 processes

241
242
243
244
245
246

Figure 2C

Replacement Sheet

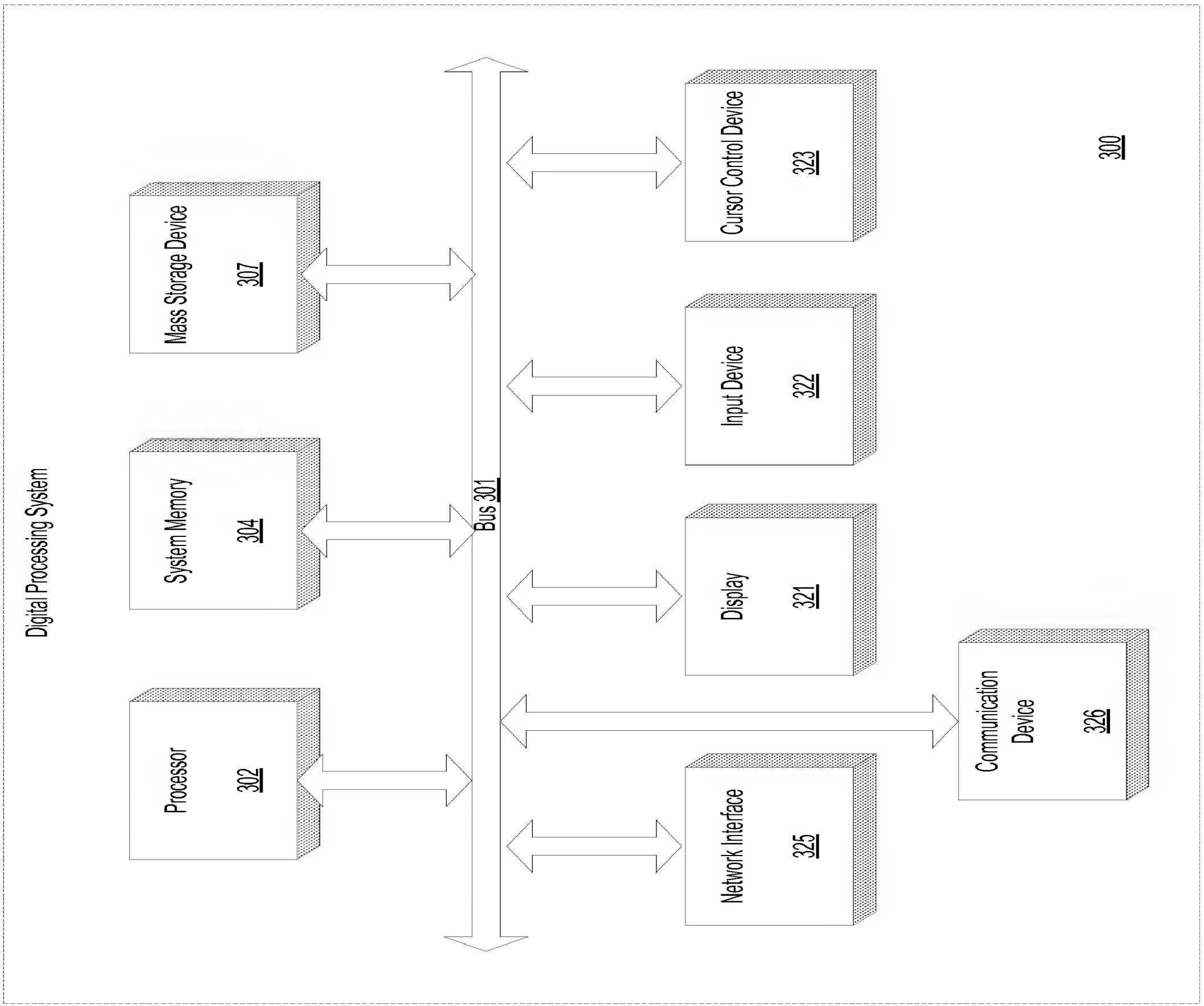
300
Digital Processing System
Bus 301
Mass Storage Device
307
System Memory
304
Processor
302
Cursor Control Device
323
Input Device
322
Display
321
Network Interface
325
Communication Device
326

Figure 3

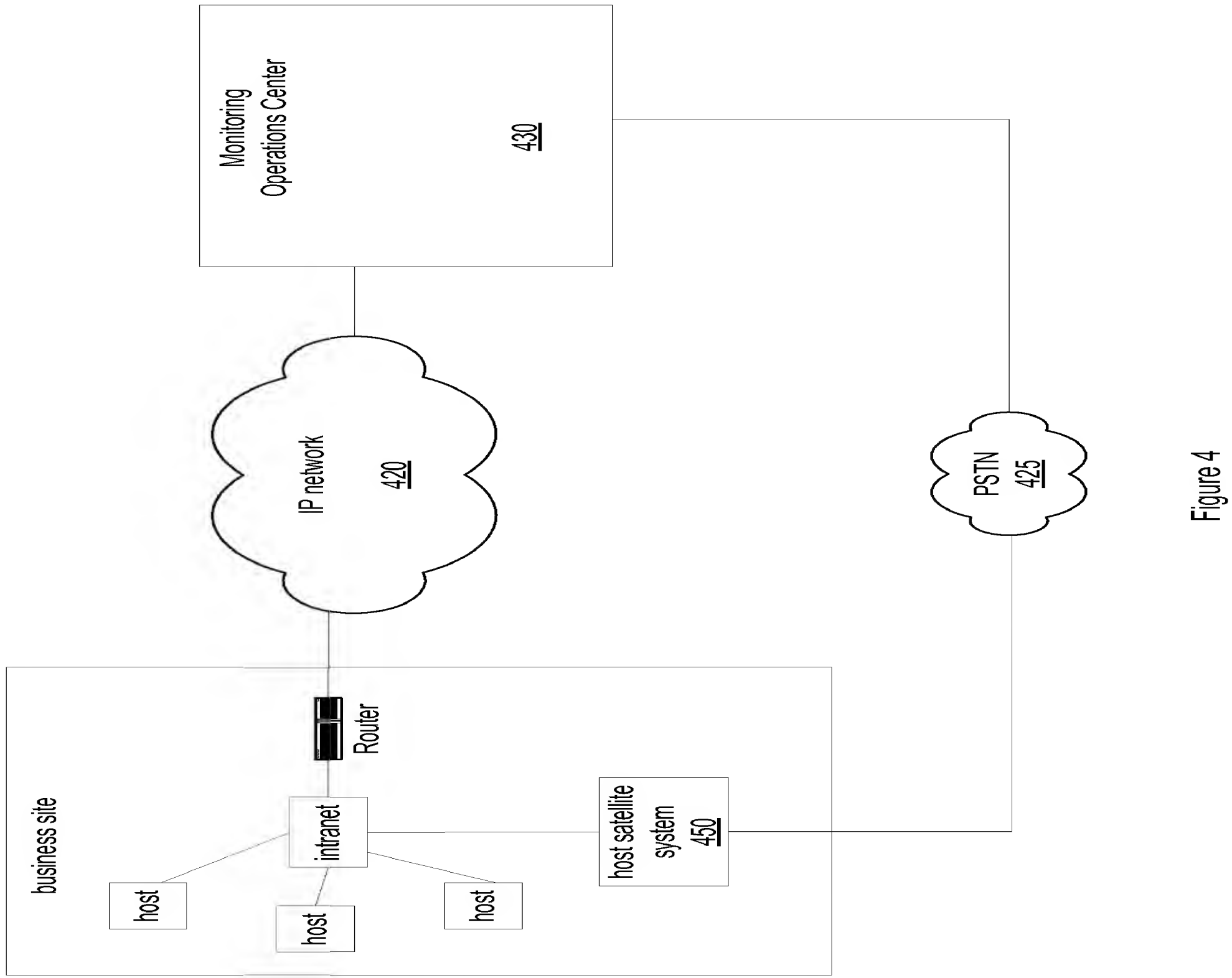
Monitoring
Operations Center
430
IP network
420
PSTN
425
business site
Router
intranet
host
host
host
host satellite
system
450

Figure 4

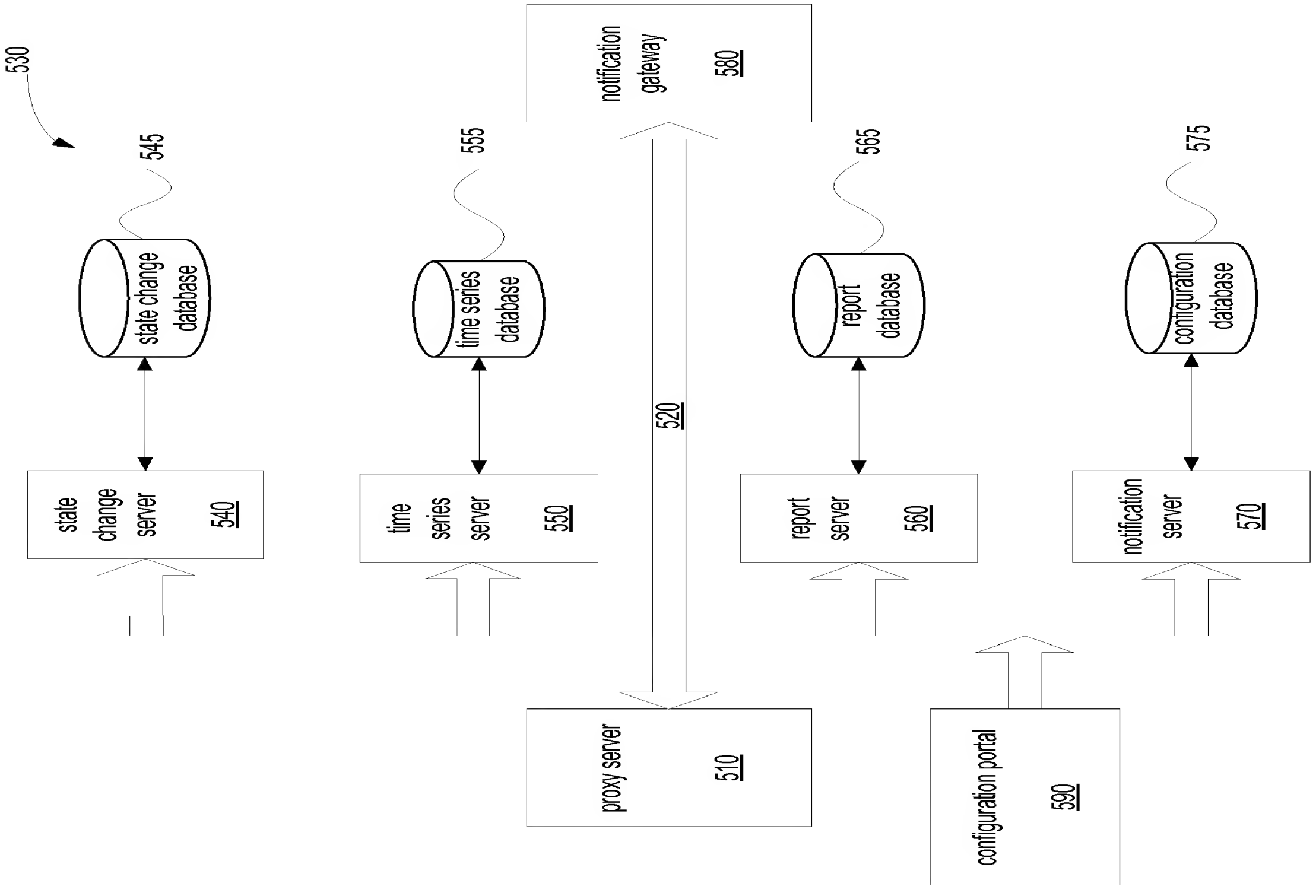
530
545
state change database
555
time series database
notification gateway
580
565
report database
575
configuration database
state change server
540
time series server
550
520
report server
560
notification server
570
proxy server
510
configuration portal
590

Figure 5

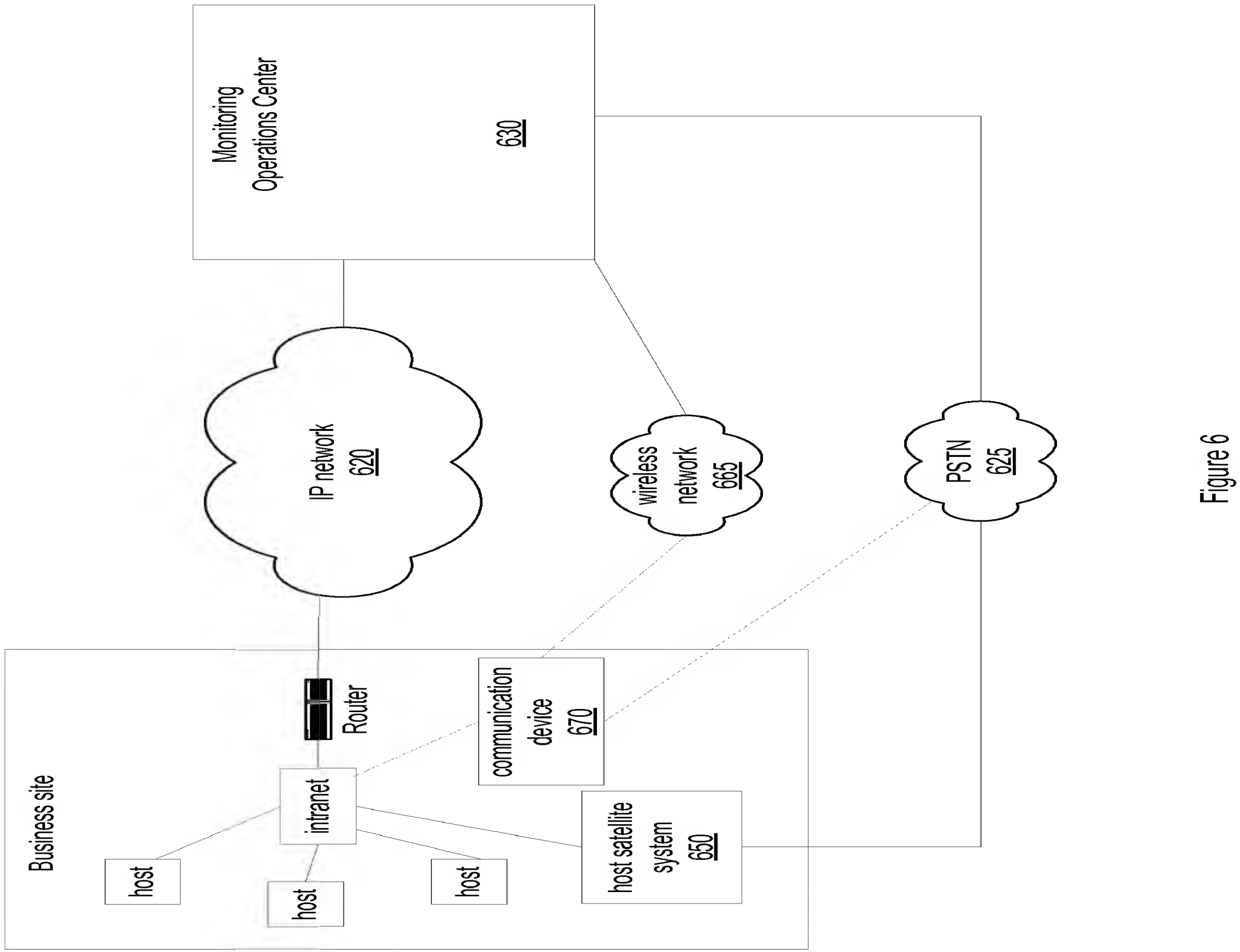
Monitoring Operations Center
630
IP network
620
wireless network
665
PSTN
625
Router
communication device
670
Business site
intranet
host
host
host
host satellite system
650

Figure 6

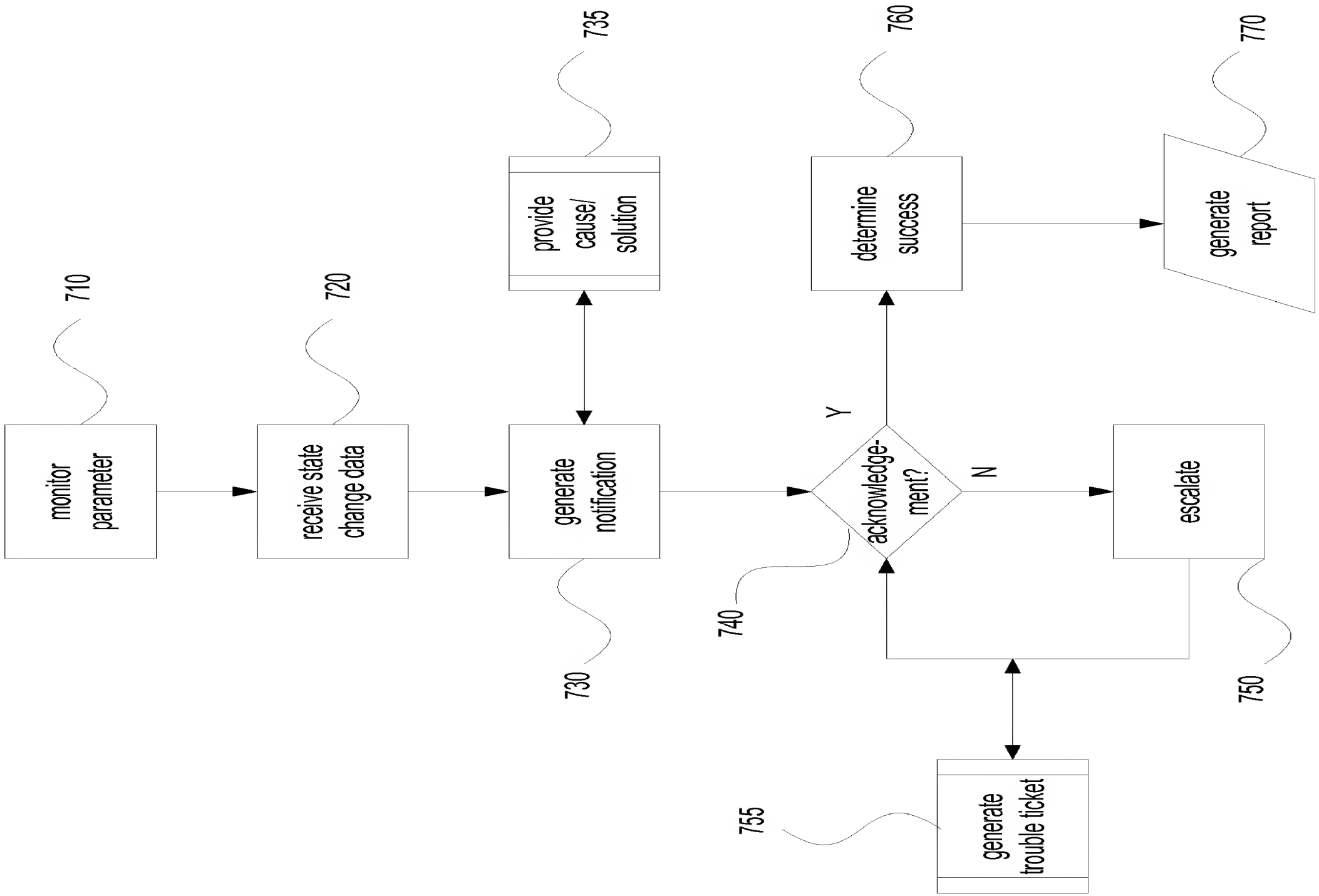
710
monitor parameter
720
receive state change data
735
provide cause/ solution
generate notification
730
760
determine success
770
generate report
Y
acknowledge-ment?
740
N
escalate
750
755
generate trouble ticket

Figure 7